



**CITY OF CALLAWAY**  
**WATER QUALITY MANAGEMENT REPORT**  
**POSTON DRIVE ROADWAY IMPROVEMENTS**  
**PRI PROJECT NO.: 220.025**



**PREPARED FOR:**

**CITY OF CALLAWAY**  
**6601 EAST HIGHWAY 22**  
**CALLAWAY, FLORIDA 32404**

**PREPARED BY:**

**PREBLE-RISH, INC.**  
**CONSULTING ENGINEERS & SURVEYORS**  
**203 ABERDEEN PARKWAY**  
**PANAMA CITY, FLORIDA 32405**

**APRIL 2014**



### Professional Engineer’s Certification

I hereby certify that I am a Licensed Professional Engineer in the State of Florida practicing with Preble-Rish, Inc. and that I have supervised the preparation of and approve the evaluations, findings, opinions, conclusions, and technical advice hereby reported for:

**Project:** Poston Drive Roadway Improvements  
Water Quality Management Report  
PRI Project No. 220.025

**Location:** Poston Drive  
Callaway, FL 32404

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Jonathan M. Sklarski, P.E.  
Senior Project Manager  
License No. 67361

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Date



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**Supporting Documents**

EXHIBIT 1 – Project Cost Estimate





## **1. Description and Location**

This project consists of the paving and stabilization of an existing dirt roadway (Poston Drive) for the purpose of improving water runoff quality within the St. Andrew Bay System. A roadside swale system is also proposed in an effort to convey stormwater runoff to the point(s) of discharge. The roadway is located within the limits of the City of Callaway (City).

The City of Callaway currently contracts with Bay County to maintain this roadway segment and regrading occurs on average once per month or as necessary after large rain events.

The intent of this project is to reduce the impact of sedimentation and pollutant discharge into East Bay which part of the St. Andrew Bay System.

## **2. Existing Conditions**

Water quality is an important concern in and around the St Andrew Bay Watershed. As land development continues to progress within the watershed, increasing measures to prevent uncontrolled runoff and sedimentation are necessary to protect our environmental resources. Furthermore, continued maintenance and upgrades to existing infrastructure are of utmost importance to reduce and prevent further degradation. Poston Drive is a good example of existing infrastructure that is in need of upgrades to reduce environmental impacts. The roadway is approximately 2,600 linear feet and connects to an existing paved roadway (Primrose Lane). Other than overland sheet flow, there are two (2) distinct outfall locations into East Bay and these areas appear to be collecting sedimentation from roadway runoff. The lack of stabilization and treatment methods compounds the problem when water runoff makes its way to the final outfall locations.



*Water Quality Management Area of Interest*



*Outfall Location #1*



*Outfall Location #2*



### 3. Assessment of Management Options

The extent of deficient water quality within the St Andrew Bay Watershed cannot be addressed by any single project. The intent of this project is to address as much water quality as possible using the available resources (i.e., City-owned right of way).

The City currently owns the Poston Drive right of way where the roadway paving and roadside swale project are being proposed. By constructing the improvements on the City-owned property (shown below), the City hopes to provide direct relief to the areas mentioned in **Section 2** by treating the runoff before it reaches the final outfall locations to East Bay.



*Water Quality Management Service Area*

The City proposes to pave and stabilize the existing dirt road and construct roadside swales in order to treat and adequately convey stormwater runoff from Poston Drive to controlled outfall locations to East Bay. The outfalls will include a baffle box designed to reduce sediment transport in the area as it reaches the outfall. The City will own the facilities and may opt to oversee maintenance and operations in lieu of contracting these services to Bay County.

Since the City does not currently own property adjacent to the Poston Lane right of way, the proposed improvements represent the only immediate action to improve water quality. Future improvements can be implemented to address further water quality issues; however, these options will require land acquisition, and thus, cannot be immediately implemented. Future options will need to be evaluated as land acquisition becomes feasible.



#### **4. Design Criteria**

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The goal of the project as a whole is to improve the substandard water quality issues in the area and to reduce the required maintenance frequency for the roadway. As such, it will be necessary to provide as much treatment as possible in the roadside swale system. Typical design criteria for the roadway and for swale the facilities are as follows:

Roadway:

- Two (2) inches SP asphalt
- Eight (8) inches limerock or crushed aggregate base
- 12 inches Type B stabilization

Swale System:

- Side slopes equal to 3:1 (maximum)
- Percolate 80% of the runoff from the 3 year – 1 hour storm event
- Slope range (0.2% to 1.0%)
- Sod stabilization

#### **5. Preliminary Engineering Assessment**

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A field review has been performed within the project limits and there appears to be sufficient right of way width to accommodate the proposed improvements. The project area is located within hydrologic soil group A, and therefore a swale system is an acceptable method of stormwater treatment. Treatment is proposed for a contributing basin approximately 3 acres and additional runoff from off-site drainage basins will be routed to the outfall locations. Roadside drainage conveyance will be designed to convey the 10-year critical storm event and any cross drains will be designed to the 25-year critical storm event.

Modeling of the drainage conveyance will be accomplished using Interconnected Pond Routing (ICPR) software.

#### **6. Future Improvements**

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Further treatment options such as stormwater ponds will require land acquisition and property owner coordination. The proposed project will not impact these future potential improvements and will be designed to allow for operation with future improvements indicated. It will be necessary to obtain several properties within the area of interest and make further improvements at a later date in order to fully address the minimal water quality treatment in the basin.

#### **7. Construction Cost Estimate**

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The proposed project described will include paving and earthwork operations. A preliminary cost of construction, engineering, and surveying has been laid out to facilitate the required planning for funding sources. The anticipated total project cost, including surveying, engineering, inspection, and contingencies, is **\$577,099.010**. The estimate was made using the Florida Department of Transportation (FDOT) Pay Item costs for 2012 and is included for review as **Exhibit 1**. The City intends to provide funding share through the value of its right of way and maintenance of the proposed improvements.





**CITY OF CALLAWAY  
WATER QUALITY MANAGEMENT REPORT  
EXHIBIT 1 - PROJECT COST ESTIMATE  
PRI PROJECT NO.: 220.021**



**PREPARED FOR:**

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CALLAWAY, FL 32404**

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City of Callaway - Stormwater Management					
Pay Item	Description	Unit	Quantity	Unit Price	Cost
Stormwater Pond Improvements					
0101 1	MOBILIZATION	LS	1.000	\$ 25,000.00	\$ 25,000.00
0102 1	MAINTENANCE OF TRAFFIC	LS	1.000	\$ 10,000.00	\$ 10,000.00
0102 3	COMMERCIAL MATERIAL FOR DRIVEWAY MAINTENANCE	CY	50.000	\$ 12.77	\$ 638.50
0104 10 3	SEDIMENT BARRIER	LF	5,200.000	\$ 1.04	\$ 5,408.00
0104 18	INLET PROTECTION SYSTEM	EA	8.000	\$ 75.52	\$ 604.16
0110 1 1	CLEARING & GRUBBING	LS	1.600	\$ 7,723.80	\$ 12,358.08
0120 6	EMBANKMENT	CY	950.000	\$ 5.94	\$ 5,643.00
0160 4	TYPE B STABILIZATION	SY	6,950.000	\$ 2.73	\$ 18,973.50
0162 1 11	PREPARED SOIL LAYER, FINISH SOIL LAYER, 6"	SY	5,700.000	\$ 0.74	\$ 4,218.00
0285706	OPTIONAL BASE, BASE GROUP 06	SY	6,950.000	\$ 13.69	\$ 95,145.50
0334 1 23	SUPERPAVE ASPH CONC, TRAF C, PG76-22	TN	800.000	\$ 93.43	\$ 74,744.00
0425 1541	INLETS, DT BOT, TYPE D, <10'	EA	8.000	\$ 2,708.61	\$ 21,668.88
0430175124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24"S/CD	LF	200.000	\$ 55.88	\$ 11,176.00
0430175248	PIPE CULVERT, OPT MATERIAL, OTHER SHAPE - ELIP/ARCH, 48"S/CD	LF	100.000	\$ 138.09	\$ 13,809.00
0430982641	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 48" CD	EA	2.000	\$ 6,084.00	\$ 12,168.00
0530 3 4	RIPRAP, RUBBLE, F&I, DITCH LINING	TN	50.000	\$ 90.41	\$ 4,520.50
0570 1 2	PERFORMANCE TURF, SOD	SY	5,700.000	\$ 2.00	\$ 11,400.00
0705 10 2	OBJECT MARKER, TYPE 2	EA	10.000	\$ 78.86	\$ 788.60
MISC. 1	BAFFLE BOX W/ FILTRATION (SUNTREE TECHNOLOGIES)	EA	2.000	\$ 70,000.00	\$ 140,000.00
Total Construction Cost				\$	468,263.72
	SURVEYING	LS	1.000	\$ 10,500.00	\$ 10,500.00
	ENGINEERING	LS	1.000	\$ 32,778.46	\$ 32,778.46
	INSPECTION	LS	1.000	\$ 18,730.55	\$ 18,730.55
	CONTINGENCIES (10%)	LS	1.000	\$ 46,826.37	\$ 46,826.37
Total Project Cost				\$	577,099.10